Mr. R. E. Savage exhibited two abnormal Herrings (*Clupea harengus*), taken by trawl in the North Sea. The first specimen had neither pelvic fins nor girdle (pelvic bones). The usual position of base of fins was indicated externally by the presence of the characteristic elongated scales. The usual musculature was present internally. The second specimen lacked the left pelvic fin and pelvic bone; the musculature was complete.

Messrs. E. Heron-Allen, F.L.S., F.Z.S., and Arthur Earland, F.R.M.S., read a paper on the Foraminifera of the Kerimba Archipelago, obtained by Dr. J. J. Simpson in the years 1907–8.

This paper has been published in the 'Transactions.'

Mr. W. L. Distant communicated his Report on the Rhynchota collected by the Wollaston Expedition in Dutch New Guinea.

This paper has been published in the 'Transactions.'

November 10, 1914.

Prof. E. W. MacBride, M.A., D.Sc., F.R.S., Vice-President, in the Chair.

The Secretary read the following report on the additions to the Society's Menagerie during the month of October 1914:—

The number of registered additions to the Society's Menagerie during the month of October was 290. Of these 268 were acquired by presentation, 15 were received on deposit, 6 in exchange, and 1 was born in the Gardens.

The number of departures during the same period, by death and removals, was 207.

Amongst the additions special attention may be directed to:—

A Collection of Birds presented by Sir Walter Gilbey, Bart., F.Z.S., on October 12th, consisting of a Hunstein's Bird-of-Paradise (*Diphyllodes hunsteini*) from South-east New Guinea, a Hildebrandt's Starling (*Spreo hildebrandti*) from East Africa (new to the Collection), a Hunting Crow (*Cissa chinensis*) from India, and a number of other rare birds.

A Collection of Birds from Chili, presented by Geo. H. F. Duncan, F.Z.S., on October 22nd, containing 10 Cayenne Lapwings (*Belonopterus cayennensis*), 2 Chilian Sea-Eagles (*Geranoaëtus melanoleucus*), 5 Gay's Finches (*Phrygilus gayi*), and others.

2 Red-necked Phalaropes (*Phalaropus hyperboreus*), from Iceland, new to the Collection, presented by W. H. St. Quintin, F.Z.S., on October 8th.

The SECRETARY exhibited a photograh showing Oysters growing upon mangroves at Lobito Bay, Portuguese West Africa.

Mr. R. H. BURNE, M.A.. V.P.Z.S., exhibited some paraffin Simulacra of Molluscan and other Shells made accidentally by Dr. C. V. Ariens Kappers while embedding objects for the microtome. During this process, paraffin in a molten state inadvertently escaped from the mould and set in the shell-forms shown, probably owing to distorted crystallization.

Mr. H. R. HOGG, M.A., F.Z.S., read his Report on the Spiders collected by the British Ornithologists' Union and Wollaston Expeditions in Dutch New Guinea.

This paper will be published in the 'Transactions.'

Birth of a Porpoise at the Brighton Aquarium.

Mr. LEWIS H. JAMES, B.A., F.Z.S., communicated the following notes upon the birth of a porpoise at the Brighton Aquarium:—

On the 26th May, 1914, a female porpoise (*Phocæna communis*) was caught in a kettle-net at Dungeness. She was transferred to a sluice immediately she was landed and left there for a short time. She was then seen to be in an advanced stage of pregnancy. Later, she was transferred by road and rail to Brighton Aquarium, where she was placed in a tank containing 110,000 gallons of sea-water. During the journey the porpoise was wrapped in wet blankets and the eyes and nares were frequently sponged with sea-water. On being placed in the tank, she seemed in good condition and swam well.

On the afternoon of Sunday, 31st May, the porpoise seemed to be in great pain. She swam to and fro in the tank, resting at intervals on the surface. This was about 3.15 P.M., and from this time typical labour movements set in. While lying at the surface of the tank she made straining movements by arching her back, and in about half an hour the first signs of the offspring appeared in the form of the tail. Labour was now very strained, and the mother appeared in great pain, probably owing to the fact of a breach presentation. About one-half of the young was forced out by spasmodic contractions, while presentation was completed by a final forced contraction. The whole process lasted from 3.15 to 5.50 P.M.

The cord was still attached to the mother, but was soon broken after she had swum 20 yards or so.

After the birth of the young, which was a still-born male, the mother was much easier, and before long was swimming about normally. After about five hours, the first signs of the afterbirth appeared and was successfully passed $4\frac{1}{2}$ hours later. As described to me by the superintendent who witnessed it, the afterbirth was "a chamois leather-like paunch" and weighed $1\frac{1}{2}$ lbs. Unfortunately it was thrown away. There were slight straining-movements during the passing of the placenta, but very little bleeding.

The young weighed 7 lbs. approximately and measured 2 feet 2 inches. It was perfectly formed, and its skin was soft, resembling a kid glove.

The mother died on Wednesday, 10th June—probably, if she had been allowed to remain in the sluice for a time, the fœtus would have turned successfully, and both mother and young would have been saved. On the journey between Lewes and Brighton the mother passed a certain amount of foaming blood through her nostrils, but when placed in the tank seemed to be perfectly fit.

The mother and young are at present at Brighton to be mounted for the local Museum.

Pine and Beech Martens.

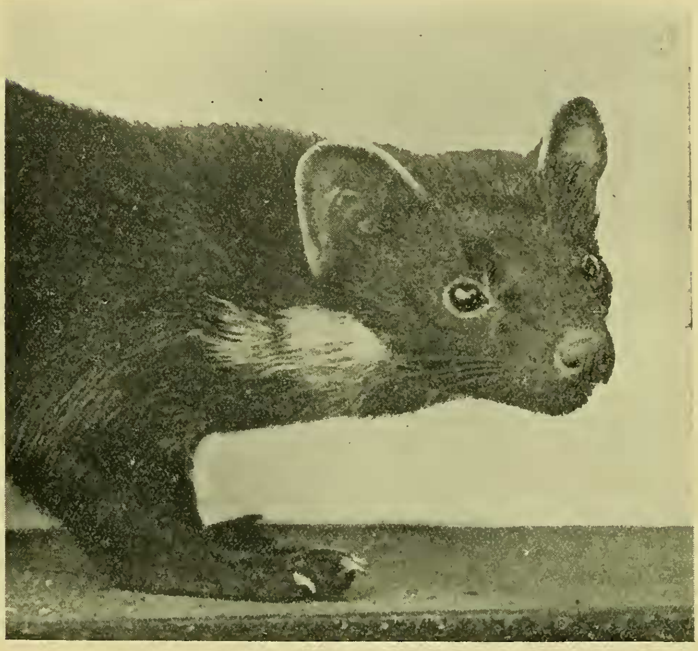
(Text-figures 1–4.)

Mr. R. I. Pocock, F.R.S., F.L.S., F.Z.S., Curator of Mammals, gave an exhibition, illustrated by lantern-slides, to show some newly noted points of difference between the Pine Marten (*Martes martes*) and the Beech Marten (*Martes foina*) and remarked:—

"The cranial and dental differences between these two species, pointed out by Mr. E. R. Alston in 1879 (P. Z. S. 1879. p. 468), are well known, and have been recently restated by Miller (Cat. Mamm. Western Europe, 1912). Alston scarcely dealt with external characters, and Miller, when describing *M. foina*, dismissed them as follows: "external form as in *M. martes*, but fur of less fine quality; colour usually more greyish or drab than in *M. martes* and seldom with the rich brown tints of [that] species, the throat patch never strongly tinged with yellow." From this it might be inferred that the only external differences between the two species are found in the texture and colour of the fur. That the differences in the structure of the ears and feet I am about to describe were overlooked by Miller, must presumably be attributed to his working with dried skins and not with specimens preserved in alcohol. The material upon which my conclusions are based are two examples of *M. martes* and one of *M. foina*, sent from France to the Gardens for Mr. Thompson Seton. They were not quite adult, but practically of the same size. They died upon the same day in September, after being kept under precisely similar conditions, and were preserved in alcohol for the investigation of external characters.

Ears.—All the Pine and Beech Martens that have been exhibited within my recollection in the Gardens could be distinguished at once, when seen side by side, by the difference in the size of the ears (text-figs. 1 & 2). In the Pine Marten these organs are relatively longer and wider and appear in consequence to be more pricked, so that the animal looks more alert than the Beech Marten. Moreover, the narrower ears in the latter make the intervening space on the crown wider, and the whole head has a broader look than in the Pine Marten. The actual differences in dimensions in the ears are shown in the subjoined table of measurements (p. 1068). In details of structure the ears are much alike, as might perhaps be expected. In both species there

Text-figure 1.

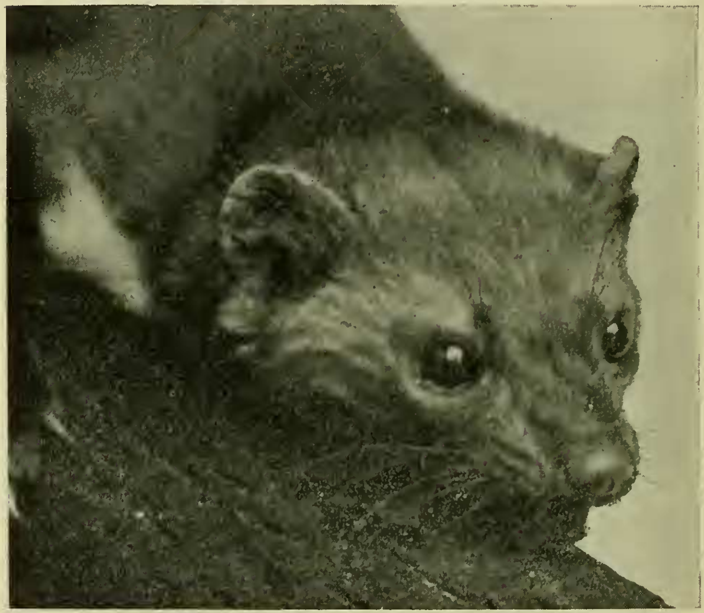


Pine Marten (*Martes martes*).

is a very distinct lobe upon the "antihelix"*; but whereas in *M. foina* this lobe is thick and fleshy, in *M. martes* it is compressed and scale-like. Finally, the integumental flap at the back of the ear, like the pinna of the ear itself, is longer in *M. martes* than in *M. foina* (text-fig. 3).

It is probable that the length and breadth of the ears will be found to vary locally in both *M. martes* and *M. foina*; but many more measurements than have as yet been taken must be recorded before the average difference in size of these organs between the two species can be established.

Text-figure 2.



Beech Marten (*Martes foina*).

Feet.—From the appearance of living animals I supposed at one time that *M. martes* was a longer legged form than *M. foina*; but measurements of specimens in the flesh show that this is not so. The feet are apparently of practically the same shape in the two. The four main digits are separated by subequal intervals and webbed, as in the Canidæ, practically to the level of the proximal margins of the digital pads. These digits, moreover, are very nearly symmetrical in the sense that the second and fifth and the third and fourth toes are respectively almost

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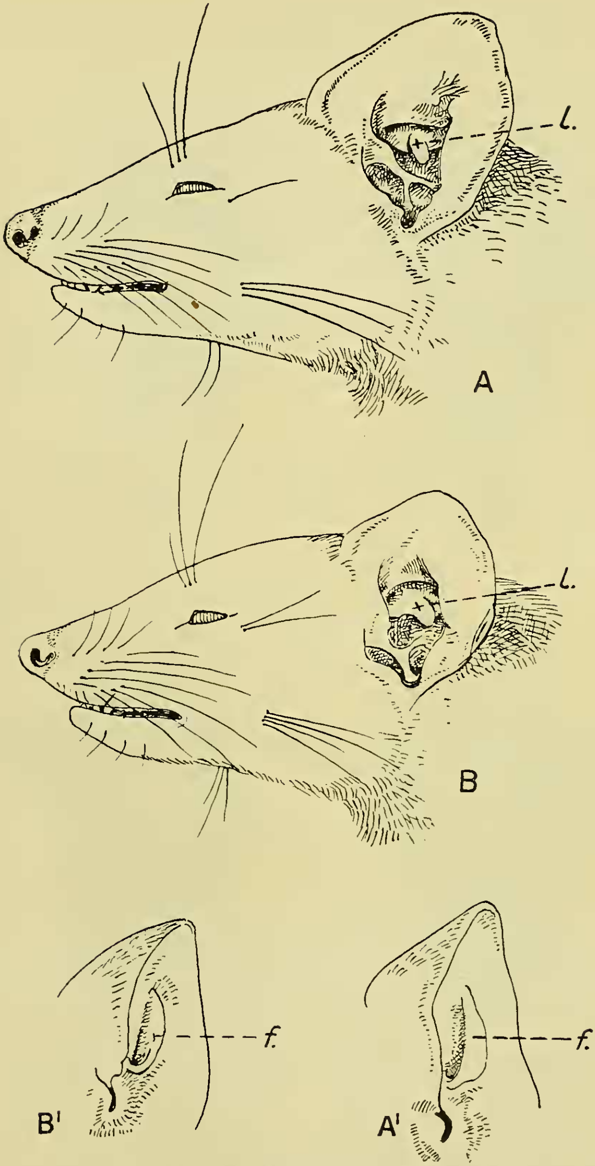
* The *plica principalis* of Boas, 'Ohrknorpel und ausserer Ohr,' 1912.

Text-figure 3.



A. Head of *M. martes*, with ear fully expanded.
l. Lobe on antihelix.

B. The same of *M. foina*.

A¹. Side view of ear of *M. martes*, with the posterior half folded forwards to show the flap (*f*) on the back of it.

B¹. The same of *M. foina*.

on a level. The area of the sole between the plantar and digital pads is thickly hairy except for narrow naked streaks, visible when the hairs are parted, running forwards from the plantar pad towards the digital pads. The area behind or above the plantar pad is also covered with hair, except that in the fore foot there are two carpal pads, a larger (hypothenar) on the ulnar side of the middle line and a much smaller (thenar) on the radial side. These two carpal pads are separated by a considerable space from the plantar pad and by a very narrow hair-covered space from one another. The main portion of the plantar pad of both fore and hind feet is nearly bilaterally symmetrical, consisting of the three normal lobes corresponding to the four principal digits, but behind the inner lobe corresponding to the second digit there is an accessory lobe or pad corresponding to the first digit. The digital pads and the lobes of the plantar pads are concentrically striate, and the summits of the lobes of the plantar pad on the hind foot are crowned with a cluster of small close-set papillæ [*].

In the particulars described above the feet of the two species are alike; but so far as the pads are concerned considerable differences may be noticed. The pads of *M. foina* may be described as normal in size; the digitals are broadly elliptical and a little longer than and nearly twice as wide as those of *M. martes*. The plantar and carpal pads also are larger and encroached upon by hair to a much lesser extent in *M. foina* than in *M. martes*. In the hind foot of *M. martes* indeed the plantar pad may be said to be reduced to four striate tubercles joined by narrow strips of hairless, soft, unstriated integument. These differences are shown in the figures and in the subjoined table of measurements (p. 1068). The smaller size of the pads in *M. martes* makes the digits appear to be longer than in *M. foina*, but there does not seem to be actually any difference in this respect between the two species (text-fig. 4).

The hair on the metatarsal area is much thicker and woollier in texture in *M. martes* than in *M. foina*.

I do not suppose that the distinguishing points in the pads above pointed out will be found to be absolutely constant in all specimens of these two Martens from different localities and at all seasons of the year; but I strongly suspect that closely corresponding differences will prove to obtain between specimens collected in the same countries or latitudes at the same season of the year. It is possible that in both species the pads are more overgrown with hair in northern than in southern individuals, and in winter than in summer. These points have, I believe, yet to be worked out in detail. But it was that possibility I had in mind when stating that the examples I examined, all probably Central European, died upon the same day and had been previously kept for several weeks under precisely similar conditions *.

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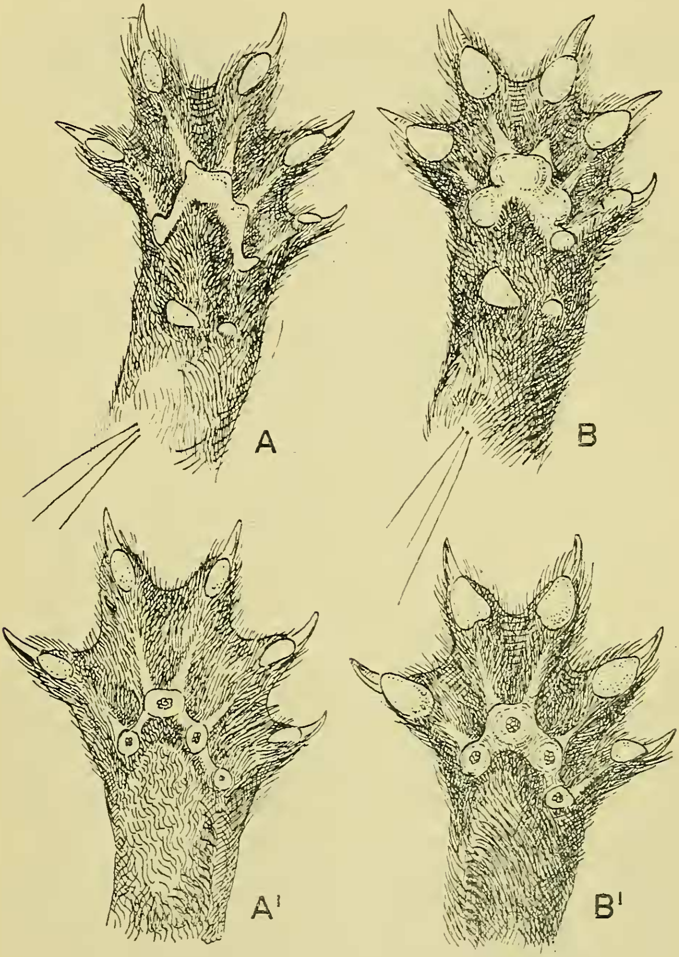
[*] Martens are prodigious jumpers, and the papillæ on the plantar pads probably obviate the likelihood of slipping during their leaping pursuit of Squirrels through the trees.

Text-figure 4.



A. Fore foot of *M. martes.*
A¹. Hind foot of the same.
B. Fore foot of *M. foina.*
B¹. Hind foot of the same.

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* Miller's statement (*op. cit.* p. 368) that the feet of *M. martes* are densely furred throughout in winter is certainly not always, if it is sometimes, true. It is contradicted by the skins of two Cumberland specimens, killed on Dec. 5th, and preserved in the British Museum. The pads in these are quite obviously bare and not even concealed, much less overgrown, by the fur of the sole.

Subjoined are the principal measurements of examples of the Pine and Beech Martens, elucidating the points above described.

	M. martes.	*M. foina.*
Length of head and body	380 mm.	380 mm.
„ tail without tuft	187 „	187 „
„ hind leg from hock	81 „	81 „
„ front leg from elbow	107 „	107 „
„ ear from notch	41 „	37 „
Width of ear fully spread	37 „	31 „
Length of median lobe of plantar pad of fore foot	5 „	8 „
Width of ditto	8 „	10 „
Width of pad excl. pollical lobe	15 „	16 „
Length of 3rd digital pad	7 „	9 „
Width of ditto	3 „	5 „
Length of larger carpal pad	3 „	6 „
Width of ditto	5 „	6 „

The dimensions in millimetres of four specimens published by Miller may be compared with those set forth above :—

	M. martes.		*M. foina.*	
	Como.	Minorca.	Switzerland.	Crete (*bunites*).
Length of head and body	470	430	453	403
„ tail	235	230	260	255
„ hind foot	94·6	87	85	79
„ ear	42	45	34	39

Making the necessary allowances for errors in small respects and for variations due to the "personal equation" of the collectors, this table bears out on the whole the contention that the ears are longer in *M. martes* than in *M. foina*. The Swiss specimen of the latter, an adult male from St. Gallen, has remarkably short ears, whereas the Cretan example, regarded by Miller as representing a distinct species (*M. bunites*), has these organs a little longer than the specimen of *M. foina* measured by myself, although, judging by the length of the hind foot, it was a smaller animal *. Miller described it as a "young adult male." It must be remembered in this connection that the ears in young mammals are always relatively longer than in the adults and probably do not increase appreciably in length after the subadult stage is reached. Clearly, however, the average length of the ear in the three examples of *M. foina* is much less than the average length of the ear in the three examples of *M. martes*, the dimensions being approximately 37 and 43 respectively."

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* The shortness of the tail and of the head and body in my examples is probably attributable to the shrinkage of specimens preserved in alcohol, which could not be properly straightened.